EGFR mutation is cost-effective with a willingness to pay above $1379.49 per extra progression-free month. In the testing strategy, patients with mutation positive disease treated with gefitinib benefited from an extra 4.52 progression-free months compared to positive patients in the non-testing strategy.

PCN76

COST-EFFECTIVENESS OF WHITE BLOOD CELL GROWTH FACTOR USE AMONG ELDERLY NON-HODGKIN'S LYMPHOMA PATIENTS TREATED WITH CHEMOTHERAPY

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OBJECTIVES: To utilize data on a large population-based cohort of elderly non-Hodgkin's lymphoma (NHL) patients treated with chemotherapy to measure the cost-effectiveness (as measured as cost per life-year saved) of white blood cell growth factor (CSF) use in a real-world setting **METHODS:** We identified 13,203 NHL patients from the SEER-Medicare database diagnosed from 1992 to 2002 who received chemotherapy within 12 months of diagnosis. Patients were followed from initial chemotherapy date until death or end of study period (October 31, 2006). Effectiveness of CSF use (primary and secondary prophylaxis) was measured as improved overall survival. Costs were estimated by summing reimbursement amounts derived from claims. Cost-effectiveness was estimated by modeling the joint influence of CSF use on costs and effectiveness using a propensity-score net monetary benefit approach. **RESULTS:** Primary prophylactic CSF use was cost-effective at lower willingness to pay thresholds, whereas at higher thresholds, not providing prophylactic CSF became the cost-effective strategy. For secondary prophylactic CSF use following neutropenia, fever, and/or infection, the opposite trend was observed. For low willingness to pay thresholds (less than $20,000 per life year gained), not administering CSF was the cost-effective strategy, while CSF use became cost-effective as willingness to pay increased (from $100,000+ per life year gained). **CONCLUSIONS:** To our knowledge this is the first population-based study to empirically measure the cost-effectiveness of CSF among cancer patients treated with chemotherapy. Results suggest that CSF use as primary or secondary prophylaxis may be cost-effective depending on society's willingness to pay for improvements in outcomes.

PCN77

COST-EFFECTIVENESS ANALYSIS OF ERLOTINIB IN THE TREATMENT OF ADVANCED NON-SMALL CELL LUNG CANCER (NSCLC) IN ROMANIA

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OBJECTIVES: Erlotinib (Tarceva®) is the first and only oral targeted therapy with both proven survival and symptom benefit in 2nd and 3rd-line treatment of patients with IIIb/IV metastatic NSCLC. We evaluated the cost-effectiveness of erlotinib versus pemetrexed, from the National Health Insurance House (NHIH) perspective. **METHODS:** A Markov model was developed using published results from two randomized clinical trials (BR.21 study and Phase III pemetrexed vs. docetaxel) evaluating progression-free survival (PFS) and overall survival (OS) in patients with NSCLC. Rates of disease progression were modeled using Kaplan-Meier analysis over 24 months; OS was further extrapolated to 36 months using a Weibull parametric function. Key assumption in the model was that PFS and OS are similar, due to lack of direct comparison studies. Utility values for the PF and progressed health states were derived from a utility study conducted in the UK. Direct medical costs were included. Resources were estimated using expert opinion from 4 oncology centers. Unit costs (for 2009) were derived from Romanian retail prices for drugs, diagnostic and monitoring tests and procedures, hospitalizations and post-treatment costs. Costs and outcomes were discounted by 3.5%. Sensitivity analysis was performed. **RESULTS:** The total cost per patient treated with erlotinib (47,762 RoI) is much lower than pemetrexed cost (76,322 RoI) due to lower drug cost, lower adverse events costs, as well as avoidance of administration costs of drug. Analysis showed that although clinical benefit is assumed to be the same, there are on average 28,561 RoI saved per patient treated with erlotinib instead of pemetrexed. Sensitivity analysis showed that even in case of lowering pemetrexed drug cost by 27% (~two administrations free), erlotinib remains a cost-saving therapy. **CONCLUSIONS:** This study demonstrates that erlotinib is a dominant treatment strategy when compared to pemetrexed, allowing for important savings.

PCN78

COST-EFFECTIVENESS MODELLING OF EPOETIN ALFA AND DARBEPOETIN ALFA IN THE TREATMENT OF CHEMOTHERAPY-RELATED ANAEMIA IN SWEDEN

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OBJECTIVES: To estimate the probability that epoetin alfa is more cost-effective than darbepoetin alfa for the treatment of chemotherapy related anemia in Sweden using a cost-effectiveness simulation model. **METHODS:** Studies for recommended dosing regimens of epoetin alfa and darbepoetin alfa were identified from the literature and used to assess haematopoietic response rates, dose escalation rates and the mean number of RBC transfusions required in chemotherapy patients. A simulation model including estimates of proportions, means and variances of these outcomes was established to estimate costs and effectiveness of these agents over 12 weeks. Published Swedish unit costs were used. Haematopoietic response rates, defined as Hb level ≥12 g/dl or an increase from baseline of ≥2 g/dl without a history of transfusion 28 days prior to response, were used as the effectiveness measure.The probability of epoetin alfa exhibiting economic dominance (higher effectiveness and lower cost) and also being more cost-effective than darbepoetin alfa was estimated. Six separate sensitivity analyses were conducted where differet costs items, variances/correlations and etsimted response rates was tested. **RESULTS:** According to this model, epoetin alfa is associated with greater effectiveness than darbepoetin alfa. Mean haematopoietic response rate was 49.86% for epoeting alfa compared to 41.38% in darbepoetin alfa. Epoetin alfa is also associated with lower costs than darbepoetin alfa, Sek 31,661 compared to Sek 43,369 over 12 weeks of therapy. The probability that epoetin alfa exhibits economic dominance over darbepoetin alfa is estimated at 92.9% and the probability that epoetin alfa is more cost-effective is estimated at 99.9%. Sensitivity analyses suggest that the model is robust and, within the margins of uncertainty, not sensitive to modifications in the underlying estimates. **CONCLUSIONS:** This analysis suggests that epoetin alfa should be considered first for treating chemotherapy-related anaemia given its cost-effectiveness profile. Comparative efficacy of these agents should be further assessed in future head-to-head studies.

PCN79

REVIEW OF COST-EFFECTIVENESS STUDIES ON AROMATASE INHIBITORS FOR THE TREATMENT OF EARLY-STAGE BREAST CANCER

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OBJECTIVES: With the recent updates of clinical guidelines of the National Comprehensive Cancer Network (NCCN) and the American Society of Clinical Oncology (ASCO), aromatase inhibitors have been included in the management of early-stage breast cancer. There has been a great interest to understand the cost-effectiveness of this new alternative therapy which is becoming an "optimal therapy" for breast cancer. The objective of this study is to review the cost-utility studies on aromatase inhibitors for the treatment of early-stage breast cancer and compare reported incremental cost-effectiveness ratios (ICERs). **METHODS:** We conducted a literature for cost-utility studies on anastrazole, letrozole and exemestane. We reviewed the papers to extract the information on intervention, comparator, ICER, country, perspective, time horizon and clinical data used. For the comparison of reported ICERs, we converted all currencies to US dollars by exchange rate for the cost-year used, then inflated the values to 2008. **RESULTS:** A total of 20 papers were identified (8 on anastrazole, 8 on letrozole and 4 on exemestane). All studies were from health care perspective and sponsored by manufacturers. The time horizon modeled ranged from 7.5 years to lifetime, however majority of the studies modeled lifetime. The studies were from EU countries and North America such as US, Canada, Belgium, Italy, Sweden and UK. The mean ICER values were $24,932 for anastrazole, $21,113 for letrozole and $21,428 for exemestane. **CONCLUSIONS:** The mean ICERs for all three aromatase inhibitors are below $25,000; hence they appear to be cost-effective compared to tamoxifen therapy for the treatment of early-stage breast cancer.

PCN80

A SYSTEMIC REVIEW OF COST-EFFECTIVENESS OF PROSTATE-SPECIFIC ANTIGEN (PSA) IN PROSTATE CANCER SCREENING

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OBJECTIVES: Controversy exists regarding the clinical and economic value of prostate cancer (PCa) screening. Our objective is to summarize cost-effectiveness studies on Pca screening with PSA. **METHODS:** We systematically searched the English-language literature for cost-effectiveness analyses (CEA) on PSA screening programs published between 1994–2009 using Medline and other databases. We collected data related to methods, screening population, screening strategies, and reporting of results. **RESULTS:** We identified 10 CEA in PCa screening using PSA, 30% of the studies investigated efficacy of PSA on PCa detection, and 70% for efficacy of PSA on both PCa detection and consequent treatments. All studies were based on either decision tree (60%) or Markov models (40%). Majority of studies only modeled single-episode screening (80%). The screening population included men age 40–79 years old, high PCa risk sample, or Medicare population. Four types of screening strategies were compared: 1) no screening vs. PSA, or PSA combined with digital rectal examination (DRE); 2) different thresholds of normal PSA; 3) isoforms of PSA (PSA, free PSA, complexed PSA); 4) different screening intervals. Method of cost-effectiveness measures varied from studies. Outcomes were presented as costs/quality adjusted life years (QALY) (30%), costs/life-years saved (40%), costs/curable cancers (20%), costs/detected cancer (10%). Only five studies originated in U.S. As compared to no screening, four studies reported an incremental cost-effectiveness ratio for screening with PSA or combined with DRE that ranged from $12,502 to $65,909/life-year saved in Medicare population aged 65–69 years, and general population aged 70–79 years, respectively. One study reported that PSA- alone screening was dominated by no screening in the general population aged 50–79 years. **CONCLUSIONS:** Economic evaluation of PSA in Pca screening remains limited. Cost-effectiveness ratios reported from studies varied from screening populations, calendar year, and country original, which made the comparisons difficult.